BEFORE THE
Federal Communications Commission
WASHINGTON, D.C.

In the Matter of	)	
	)	
HEAR-IT NOW Petition for Rulemaking	)	RM-8658
	)	
	)	
Section 68.4(a) of the Commission's Rules:	)	
Hearing Aid Compatible Telephones	)	

COMMENTS OF THE CELLULAR TELECOMMUNICATIONS & INTERNET ASSOCIATION

The Cellular Telecommunications & Internet Association ("CTIA")[1] hereby submits its Comments in response to the Commission's Public Notice seeking comment on the Wireless Action Coalition's ("WAC") request to reopen the above-captioned proceeding.[2] Based on the progress to date, CTIA believes it is premature for the Commission to commence a rule making proceeding at this time.

INTRODUCTION

Five years ago, the wireless industry, hearing aid manufacturers, hearing health professionals, and organizations representing affected consumers (collectively, the "stakeholders") embarked on a summit process designed to address the electromagnetic compatibility ("EMC") between digital wireless phones and hearing aids. As a participant in this

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[1] CTIA is the international organization of the wireless communications industry for both wireless carriers and manufacturers. Membership in the association covers all Commercial Mobile Radio Service ("CMRS") providers and manufacturers, including cellular, broadband PCS, ESMR, as well as providers and manufacturers of wireless data services and products.

process from the beginning, CTIA can attest that this process has been a technically challenging, lengthy and sometimes frustrating experience for all. Despite these challenges, the summit participants have remained steadfast in their efforts to resolve the EMC issue and to provide the benefits of digital wireless telecommunications to all consumers, including consumers with hearing impairments. The wireless industry has, and continues to demonstrate its commitment to address the difficult technical and policy issues associated with the EMC between digital wireless phones and hearing aids. Although exempted by Congress from hearing aid compatibility requirements, the wireless industry, without any government intervention, has responded to the challenge in a variety of ways. For example, the wireless industry has funded and participated in the Interaction of Wireless Phones and Hearing Aids Research Project at the University of Oklahoma's Center for the Study of Wireless Electromagnetic Compatibility ("Wireless EMC Center").[3] CTIA has included hearing aid compatibility with wireless phones as part of its on-going, multi-disciplinary approach to accessibility issues. This includes establishing a website -- www.accesswireless.org -- to provide information to consumers with disabilities, as well as conducting several training sessions around the country that utilize CTIA's accessibility training materials. In addition to CTIA's efforts on behalf of the wireless industry, several CTIA members have provided significant contributions and resources to the industry's commitment by undertaking proprietary research on this issue and developing interim solutions for consumers who wear hearing aids and want to use digital wireless phones. While CTIA

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[2] *Wireless Telecommunications Bureau Seeks Comment on Request to Re-open the Petition for Rule Making Regarding Hearing Aid-Compatible Telephones*, RM-8658, Public Notice, DA 00-2402 (rel. Oct. 8, 2000) ("Public Notice").

[3] See University of Oklahoma Wireless EMC Center, *Study of the Interaction of Wireless Phones and Hearing Aids* (visited Dec. 5, 2000) <http://www.ou.edu/engineering/emc/projects>.

acknowledges the WAC concern that not enough progress has been made,[4] but given the complexity of the problem and the need to jointly reach solutions with an industry that is not subject to regulatory oversight, CTIA respectfully disagrees with the WAC's conclusion.

The Wireless EMC Center, Etymotic Research, and the Rehabilitation Engineering Research Center on Hearing Enhancement ("RERC") have conducted significant research and identified the factors that contribute to electromagnetic interference between wireless phones and hearing aids. These research efforts have been instrumental in leading to the development of a testing standard to measure the level of interference between an individual's hearing aid and a digital wireless phone (ANSI C63.19). Based on discussion with the co-chair of the ANSI C63.19 task group, CTIA anticipates that the standard will be finalized by late January 2001. Completing the standards work, however, is not the *accompli feat*. Both the wireless and hearing aid industries must have sufficient time to implement the standard within their respective companies. While implementation of the standard is important, it is still not enough. The researchers agree that all the stakeholders must develop and support efforts to educate consumers, audiologists, and wireless industry sales and marketing personnel, on how to apply the standard to the benefit of consumers. Based on the record to date, there is every reason to believe that this will be done. Accordingly, it is premature at this time for the Commission to intervene and commence a rule making proceeding.

I. THE HEARING AID COMPATIBILITY ACT AND THE EVIDENCE IN THE RECORD DO NOT SUPPORT REVOCATION OR LIMITATION OF THE STATUTORY EXEMPTION.

In its initial comments, CTIA provided an extensive legal analysis of the Hearing Aid Compatibility Act of 1988,[5] and in particular, the clear statutory language and congressional

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[4] See Letter to Bill Caton from the Wireless Action Coalition, filed Oct. 7, 2000.

intent for exempting mobile telephones, now called CMRS phones, from the Commission's initial hearing aid compatibility requirements.[6] The enactment of the Telecommunications Act of 1996 did not repeal the Hearing Aid Compatibility Act.[7] Thus, the Commission's consideration of the WAC request must be considered in the context of the Hearing Aid Compatibility Act, rather than limited to a Section 255 analysis. Since the legal analysis remains relevant to the current phase of this proceeding, CTIA refers to, and incorporates by reference, its earlier comments on the application of the Hearing Aid Compatibility Act. Rather than repeat those comments here, CTIA will address how the Commission must reconcile the provisions of Section 255 concerning access by persons with disabilities to telecommunications services generally, with the clearly defined obligations set forth in the Hearing Aid Compatibility Act.

Before the Commission revokes or limits the statutory exemption for wireless telephones, the Hearing Aid Compatibility Act requires the Commission determine that:

(i) such revocation or limitation is in the public interest;

(ii) continuation of the exemption without such revocation or limitation would have an adverse effect on hearing-impaired individuals;

(iii) compliance with the Commission's Part 68 HAC requirements is technologically feasible for wireless telephones; and

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[5] 47 U.S.C. § 610 *et seq.* (1995).

[6] See In the Matter of HEAR-IT NOW Petition for Rule Making, Section 68.4(a) of the Commission's Rules: Hearing Aid Compatible Telephones, RM 8658, Comments of the Cellular Telecommunications Industry Association (filed July 17, 1995).

[7] Section 601(C) of the Telecommunications Act of 1996 states that "[t]his Act, and the amendments made by this Act shall not be construed to modify, impair, or supersede Federal, State, or local law unless expressly so provided in such Act or Amendments.

(iv) compliance with the Commission's HAC requirements would not increase costs to such an extent that the wireless telephone could not be successfully marketed.[8]

Moreover, if the Commission decides to initiate a rulemaking proceeding on hearing aid compatibility with digital wireless phones, the Commission must specifically consider the costs and benefits to all telephone users, including persons with and without hearing impairments, and must encourage the use of currently available technology, and not discourage or impair the development of improved technology.[9]

II. Research Studies and the Finalization of the ANSI C63.19 Testing Standard Demonstrate Steady Progress And Does Not Warrant Government Intervention.

The research efforts of three primary North American studies,[10] and one standards-setting organization,[11] have provided significant data on the technical challenges associated with the electromagnetic interaction between hearing aids and wireless phones, and have developed measurement methodologies to address the electromagnetic compatibility of hearing aids and

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[8] See 47 U.S. C. § 610(b)(2)(C).

[9] See 47 U.S.C. § 610(4)(e).

[10] University of Oklahoma Wireless EMC Center, Study of the Interaction of Wireless Phones and Hearing Aids, (visited Dec. 5, 2000) <http://www.ou.edu/engineering/emc/projects>; Mead C. Killion, Ph.D., Digital Cellphone Progress Report, Presentation Before the Hearing Aid Industry Annual Meeting (Feb. 24, 2000) (revised Aug. 29, 2000); The Rehabilitation Engineering Research Center on Hearing Enhancement, Assistive Hearing Technology: Handheld Directional Microphones used with BTE-FM Hearing Aids; Electromagnetic Interference in Hearing Aids (Dec. 5, 2000) <http://hearingresearch.org/microphones.html>.

[11] ANSI ASC 63 formed C63.19 task group "to develop a measure standard for hearing aid compatibility with wireless communications devices." See H. Stephen Berger, Compatibility Between Hearing Aids and Wireless Devices, Written Presentation Before the CTIA Training Workshop on Access to Wireless Communications for Persons With Hearing Disabilities (Apr. 17, 1997.)

other devices. In October 2000, CTIA met via conference call with the principal researchers of these studies and the co-chair of the ANSI AS C63.19 task group to assess the status of the research, the progress of the testing standard, and the next steps in the inter-industry HAC Summit process.[12] While the research protocol for each study was different, the findings and conclusions on several major issues were in full accord:

- A critical factor in measuring the interaction between hearing aids and wireless phones is the speech to noise ratio (SNR). In general, it appears that a SNR of 20 to 30 dB is an acceptable level of speech to notice ratio depending on where the line is drawn with respect to near- and far-field measurements.

- Configuration of a person's hearing loss is a significant factor. This configuration varies among test subjects. Since hearing aids are designed to accommodate the unique configuration of a person's hearing loss, this varying nature of hearing aid devices defies standardization process. Thus, it is virtually impossible to create a "one size fits all" solution for every phone and every hearing aid.

- Shielding has not been the most effective means to increase the immunity level. Hearing aid manufacturers have found that a decoupling technique is more reliable in achieving a higher immunity level.

- There are some hearing aids on the market that can be used successfully with some digital phones. Primarily, these hearing aids have been manufactured after 1996. While the testing standard will assist both hearing aid and phone manufacturers to measure their embedded base products, the researchers agree that retrofitting a hearing aid or a phone is not economically feasible for the consumer or the manufacturer.

- The Hearing Aid Summit, the research studies, and the standards process, have brought the issue of EMC of hearing aids with many digital devices to the forefront. At a recent meeting of the American Audiologist Association, an overwhelming majority of hearing aid

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[12] Conference call with Dr. Hank Grant, Director of the Wireless EMC Center, Dr. Harry Levitt, RERC, Linda Kozma-Spytek on behalf of Dr. Judy Harkins, Gallaudet University, and Stephen Berger, formerly with Siemens Business Communications Center and co-chair of the ANSI C63.19 task group (Oct. 25, 2000). While Dr. Mead Killion was unavailable to participate on the conference call, he provided CTIA with a copy of his February 2000 presentation before the HIA Annual Meeting.

manufacturers present indicated that their respective companies have initiated efforts on the immunity and EMC of hearing aids with digital devices.[13]

- The representatives on the conference call unanimously agreed that the research and the finalization of the testing standard has been a lengthy yet necessary process. They also agree that both hearing aid and wireless industries must develop an industry awareness campaign about the testing standard.

- Once the testing standard is finalized, additional time will be required for hearing aid manufacturers and digital device makers to begin to understand and employ such measurements in their testing process.

The interference test standard will provide consumers with a way to pair their hearing aid and a digital wireless phone. The standard works by measuring both the electric and magnetic field immunities of the hearing aid and the electric and magnetic field emissions of the wireless phone. Both hearing aids and wireless phones are to be categorized (categories 1,2,3 or 4) based on the results of the test measurements. Consumers will then be able to pair their hearing aid with a wireless phone by adding the hearing aid immunity category value and the wireless phone emission category value. Any combination of hearing aid and wireless phone that equals five or more should allow normal use by the consumer.[14]

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[13] Digital phones are just one of the EMC issues confronting hearing aid manufacturers and users.

[14] This interference standard is unable to take into account the individuality of hearing aids that are designed for a user's specific hearing loss. Because of the uniqueness of individual hearing aids, users can expect to find some variations in the use and application of the standard. But the standard will permit users to select compatible handsets and hearing aids from a more narrow set of products.

That the stakeholders have made progress on the interference issue since 1996 is clearly demonstrated. In fact, several manufacturers have developed and now offer interim solutions that allow hands-free use of a digital wireless phone. In particular, Nokia and Motorola offer inductive coupling loopset accessories for their phones which allow digital wireless phones to operate with hearing aids in T-coil mode.

CTIA also has engaged in discussions with the Wireless Access Coalition through one of the Coalition's members, Larry Eng. CTIA representatives and Mr. Eng have discussed the progress made thus far and agreed to continue an open dialogue to ensure that further work on resolution of the interference issues associated with hearing aids and digital wireless phones can proceed with the assistance and input from all stakeholders.

CONCLUSION

The stakeholders have made steady progress since 1996 in addressing and resolving the compatibility of hearing aids and digital wireless phones. In fact, there are some hearing aids on the market that are compatible with some digital phones, and several manufacturers have developed and now offer interim solutions that allow hands-free use of a digital wireless phone. While the wireless industry has not done all that it can do to communicate the results of the work already completed, CTIA has met with consumers, including a representative of the Wireless Action Coalition, regarding the concerns raised in the Wireless Action Coalition's letter to the FCC. Based on the progress to date, CTIA believes it is premature for the Commission to commence a rule making proceeding at this time.

Respectfully submitted,

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